## REMARKS/ARGUMENTS

Claims 1-6, 8 and 10-15 are pending herein. Claim 1 has been amended to include the subject matter of claim 7 and to clarify that the buffer layer thickness is within 0.002-0.1 $\mu$m, as supported by paragraph [0031] of the specification, for example. Claims 7 and 9 have been cancelled without prejudice or disclaimer. New claim 15 is added hereby.

Original specification paragraph [0031] discloses that the buffer layer thickness "is set within 0.002-0.5 $\mu$m, particularly within 0.005-0.1 nm." The disclosure of 0.1 **nm** is clearly a typographical error given the fact that the "particularly within" buffer layer thickness range of 0.005-0.1 nm is not within the dominant 0.002-0.5 $\mu$m buffer layer thickness range. This typographical error has been corrected by changing "particularly within 0.005-0.1 nm" appearing in original specification paragraph [0031] to -- particularly within 0.005-0.1 $\mu$m -- . No new matter has been added to the specification.

Examiner Im and SPE Lee are thanked for courtesies extended to applicants' representative (Steven Caldwell) during a telephonic interview on June 8, 2004. The substance of that interview has been incorporated into the following remarks.

1. Claims 1-14 were rejected under §103(a) over Ohba in view of Kunisato. To the extent that this rejection might be applied against amended claim 1 (and all claims dependant therefrom), it is respectfully traversed.

Claim 1 recites, among other things, a semiconductor element having an Al-including underlayer on a substrate, a buffer layer on the underlayer and a Ga-including semiconductor layer group on the buffer layer. Claim 1 has been amended to clarify that the thickness of the underlayer is set within 0.5-1000 $\mu$m and the thickness of the buffer layer is set within 0.002-0.1 $\mu$m. The applied prior art of record, as combined in the Office Action, does not disclose or suggest the underlayer and buffer layer thickness limitations now recited in pending claim 1.

Fig. 6 of Ohba shows a single buffer layer 11 positioned between semiconductor active layers 12-16 and substrate 10. Ohba discloses that "if the film thickness of the buffer layer exceeds over 0.3 $\mu$m, cracks may be generated in the buffer layer" (see col. 6, lines 60-63).[1]

Fig. 1 of Kunisato shows that GaN layer 3 is positioned on AlGaN layer 2 and those layers are sandwiched between semiconductor active layers 4-8 and substrate 1. Kunisato discloses that the thickness of GaN layer 3 is 0.2 $\mu$m or 0.4 $\mu$m (see column 5, line 31, column 9, lines 35-36, column 10, lines 18-19, and column 10, lines 62-63 of Kunisato).

The PTO confirmed during the interview that the combination of Ohba and Kunisato, as alleged in the Office Action, would result in Kunisato's GaN layer 3 being formed on Ohba's AlN (Ga) buffer layer 11. Since Ohba teaches that light-emitting element layers 12-16 can be simply grown on buffer layer 11, absent viewing Applicants' disclosure, skilled artisans would have had no reason to add Kunisato's GaN layer 3 between Ohba's buffer layer 11 and light-emitting layers 12-16, as alleged in the Office Action. The addition of Kunisato's GaN layer 3 in Ohba's structure is based on pure hindsight, especially since such a layer would be unnecessary surplusage according to the teachings in Ohba. This rejection should be withdrawn for this reason alone.

In any event, even if Ohba and Kunisato were combined as alleged in the Office Action, there would still be no disclosure or suggestion of the claimed buffer and underlayer thickness limitations recited in pending claim 1. For the reasons discussed above, skilled

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[1]Ohba provides contradictory disclosure with respect to the thickness range of buffer layer 11. While column 6 and Ohba's claim 11 disclose a buffer layer film thickness range of 20 nm to 0.3 $\mu$m, column 8 generically discloses that a suitable range for the buffer layer film thickness is 30 nm to 500 nm. Column 8 further teaches that cracks would occur in the buffer layer if it is too thick, but does not disclose what buffer layer thickness is considered to be "too thick." Applicants respectfully submit in light of the clear teaching in Ohba's column 6 that Ohba considers a buffer layer thickness exceeding 0.3 $\mu$m as "too thick." As such, notwithstanding the contradictory statements in Ohba concerning the buffer layer thickness, skilled artisans would understand, based on the overall disclosure in Ohba, that buffer layer cracking is likely to occur if the buffer layer thickness exceeds 0.3 $\mu$m.

artisans would understand that, in order to avoid buffer layer cracking, Ohba's AlN (Ga) buffer layer 11 should be less than 0.3 $\mu$m thick, which falls outside of the claimed underlayer thickness range of 0.5-1000 $\mu$m. This is another reason that this rejection should be withdrawn.

Moreover, the thickness of Kunisato's GaN layer 3, which the PTO alleges corresponds to the claimed buffer layer, is disclosed to be 0.2 $\mu$m or 0.4 $\mu$m, which falls outside of the claimed buffer layer thickness range of 0.002-0.1 $\mu$m. As such, even if Ohba and Kunisato were combined as asserted in the Office Action, the resultant structure would still not disclose or suggest each and every element recited in pending claim 1. This is yet another reason that this rejection should be withdrawn.

In view of all of the foregoing, reconsideration and withdrawal of the §103(a) rejection over Ohba in view of Kunisato are respectfully requested.

If Examiner Im believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, she is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

June 16, 2004
Date

Stephen P. Burr
Reg. No. 32,970

SPB:SWC:jms

BURR & BROWN
P.O. Box 7068
Syracuse, NY 13261-7068

Customer No.: 025191
Telephone: (315) 233-8300
Facsimile: (315) 233-8320